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| 10/708,909 | 03/31/2004 | Ronald W. Korzun | 136483-1 | 2908 |
| 23413 | 7590 | 04/24/2006 | EXAMINER | |
| CANTOR COLBURN, LLP 55 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002 | | | EDGAR, RICHARD A | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 3745 | |

DATE MAILED: 04/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/708,909

Applicant(s)

KORZUN ET AL.

Examiner

Richard Edgar

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on an amendment filed 23 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 and 15-19 is/are rejected.
- 7) ☒ Claim(s) 14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 February 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 11/9/2005.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Response to Arguments

Applicant's arguments filed 23 February 2006 have been fully considered but they are not persuasive.

Applicant opines that the Ortolano reference (US Patent No. 5,238,368) does not fairly suggest the rivets 13 being used with any other structure other than the disclosed band 10. Referring to the previous Office action, specifically on page 4, the examiner expressed that Mosser (US Patent No. 2,315,641) teaches the overcover 16 for turbine blades. One having ordinary skill in the art can appreciate that the Ortolano reference can be capable of receiving an overcover, such as that taught by Mosser, regardless that Ortolano does not specifically teach an overcover. If, in fact, Ortolano did suggest an overcover, a 35 U.S.C. §102 rejection would have been made with the Ortolano reference alone. If Applicant's first argument were persuasive, 35 U.S.C. §103 would be moot.

Next, Applicant has argued that Mosser discloses a tie band which minimizes vibratory stresses, and that sealing blade tips against leakage for adjacent cover portions of adjacent blades is not suggested in the reference. The examiner disagrees. In Fig. 3 of Mosser, adjacent blades 14 with abutting shrouds 15 are tied with solid band 16 bridging the abutting corners 22 of the shroud. See Fig. 4 for another view of a solid band 16. Due to the disclosed structure of the band, the examiner cannot determine how the band promotes leakage, which would support the Applicant's argument.

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Applicants' assertion that the band "does nothing more than 'tie' blades together" is not persuasive. One having ordinary skill in the art can appreciate based on the structure of the band 16 alone, the band, besides minimizing vibrations, also performs a sealing function between adjacent blades. The examiner notes that Applicant's argument is based on functional language and lexicography, and no structural differences.

Applicant's admission at the last sentence on page 9 of the 23 February 2006 amendment that the instant invention does not minimize vibratory stress is acknowledged. The claims, which recite, "at least one of stiffen deterministic constraint of said tips and seal against leakage through said facing sides for adjacent cover portions" satisfies 35 U.S.C. § 112 since one of the limitations is enabled and definite.

Applicant's arguments regarding the Laszlo reference are deemed persuasive.

Information Disclosure Statement

The information disclosure statement filed 09 November 2005 has been considered. As a courtesy, the examiner invites Applicant to review the reference cited therein, since they do not appear relevant to the instant application, and may have been submitted with application no. 10/708,909 by mistake.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 3, and 10-12 are rejected under 35 U.S.C. 102(b) as being anticipated by United States Patent No. 3,702,221 (Ortolano '221 hereinafter).

Ortolano '221 shows in Fig. 7 multiple group of blades for an integral covered nozzle of a turbine comprising: multiple blades 36; multiple respective cover portions 38a, 38b defining a first surface configured to span tip of the blades 36, and an overcover 34a, 34b.

The cover portions 38a, 36b include tenons 39 extending through an aperture in each overcover 34a, 34b.

The tenon 39 is peened with respect to the overcover 34a, 34b (col. 4, line 42).

Claim 5 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over United States Patent No. 3,702,221 (Ortolano '221 hereinafter).

Ortolano '221 shows in Fig. 7 multiple group of blades for an integral covered nozzle of a turbine comprising: multiple blades 36; multiple respective cover portions 38a, 38b defining a first surface configured to span tip of the blades 36, and an overcover 34a, 34b.

Ortolano '221 teaches that the overcover 34a, 34b is fastened with a tenon 39 which is deformed (col. 3, lines 4-6). The claimed phrase "one of welded and brazed" is being treated as a product by process limitation; that is, that the overcover is one of welded and brazed. As set forth in MPEP 2113, product by process claims are NOT limited to the manipulations of the recited steps, only to the structure implied by the steps. Once a product appearing to be substantially the same or similar is found, a 35 U.S.C. 102/103 rejection may be made and the burden is shifted to applicant to show an unobvious difference. See MPEP 2113.

Thus, even though Ortolano '221 shows a tenon, it appears that the product in Ortolano '221 would be similar as that claimed; especially since both applicant's product and the prior art product fasten an overcover to a shroud in a turbine engine.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 10-13 and 15-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,238,368 (Ortolano hereinafter) in view of U.S. Patent No. 2,315,641 (Mosser hereinafter).

Ortolano teaches a multiple group of blades comprising: multiple blades foils 12; multiple respective cover portions 17 defining a first surface 23 configured to span tips of multiple adjacent blades between tip locations of adjacent blades thereby to form the cover portions for adjacent blades and wherein the cover portions associated with each respective adjacent blade include facing sides 18 for adjacent cover portions of adjacent blades.

Each multiple respective cover portion includes a tenon 13 extending therefrom in the overcover. The tenon 13 is peened by riveting (col. 2, line 43).

The blades further comprise a material buildup 19 on at least one facing side 18 of the cover portions, the material buildup having been machined to develop an interface between adjacent cover portions of adjacent blades (see col. 2, lines 58-65).

The material buildup is applied by a selectively mechanical or metallurgical action on both facing sides of the cover portion (col. 2, lines 59-61). The material buildup 19 is applied between cover portions 17 on all adjacent blades thereby to effect integral covered blading (col. 2, lines 5-6).

The blades include a selectively applied underweld or underbrazed 27 between a cover portion 17 and a blade tip thereby to effectively secure the cover portion to the blade (see col. 3, lines 33-34).

The blades in the rotor are replaced in the rotor after the interface has been machined (see col. 4, lines 8-11).

Buildup 20 on the circumferential outerface of the cover and circumferential innerface of the cover is machined (see col. 2, lines 62-68).

Ortolano does not disclose an overcover coupled to a second surface opposite the first surface of the respective cover portion.

Mosser shows turbine blading with cover portions 15, whereby an overcover 16, having a thickness less than the cover portions 15 is provided for the purpose of connecting the blades 10 in groups.

Since Ortolano teaches to integrate turbine blading and Mosser teaches that an overcover 16 should be used to integrate turbine blading, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the Ortolano turbine blading arrangement so that an overcover as taught by Mosser is applied to the rivets 13, for the purpose of integrating the turbine blading, thereby minimizing vibratory stresses.

Claims 4 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent No. 3,702,221 (Ortolano '221 hereinafter) as applied to claims 1 and 10 above, and further in view of U.S. Patent No. 2,315,641 (Mosser hereinafter).

Ortolano '221 shows an overcover 34a, 34b which appears to be the same thickness as the cover portions 38a, 38b.

Mosser teaches an overcover 16 being thinner than the shroud 15 for the purpose of decreasing the weight of the rotor.

Since Ortolano '221 is a turbine rotor with two cover portions, and Mosser teaches to make the outer cover portion thinner than the inner cover to reduce the turbine rotor weight, it would have been obvious at the time the invention was made to a

person having ordinary skill in the art to modify the overcover 34a, 34b thicknesses thinner than the cover portions 38a, 38b for the purpose of decreasing the weight of the rotor.

Claims 6, 7, 8, 9, 15, 16, 17, 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent No. 3,702,221 (Ortolano '221 hereinafter) in view of United States Patent No. 5,238,368 (Ortolano '368 hereinafter).

Ortolano '221 teach adjacent cover portions, but not a material buildup therebetween.

Ortolano '368 teaches in col. 2, lines 58-62 a material buildup between facing sides 18 of the cover portions for the purpose of integrating the cover portions. The blades are removed, weld built, and reassembled (see col. 4, lines 8-12). The weld buildup extends to the outer circumferential face 22 of the band 17 and the inner circumferential face 23 of the band 17 (see col. 2, lines 65-68).

Since Ortolano '221 shows adjacent cover segments, and Ortolano '368 teaches to use a material buildup between adjacent cover segments, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to use a material buildup between adjacent Ortolano '221 cover segments as taught by Ortolano '368 for the purpose of integrating the cover portions.

Regarding claims 9 and 18, Ortolano '368 shows an underweld or underbrazed 27 in Fig. 3 for the purpose of strengthening the contact between the blade and the cover portion.

Since Ortolano '221 shows a joint between the blade and the cover portion, and Ortolano '368 teaches strengthening the joint between the blade and the cover portion, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the Ortolano '221 reference with an underweld or underbrazed as taught by Ortolano '368 for the purpose of strengthening the contact between the blade and the cover portion.

Examiner Note

The best prior art is deemed to be the Ortolano '221 reference and combinations with said reference. MPEP 706.02 suggests rejections be confined to the best prior art. However, since Applicant's arguments regarding the Ortolano '368 reference and combinations therewith were not found persuasive regarding claims 1-4, 10-13 and 15-19, that rejection is included above in an attempt to expedite examination of the instant application.

Allowable Subject Matter

Claim 14 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: All of the cited references use a tenon and aperture connection between the

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cover and overcover, and do not fairly suggest the method of one of brazing and welding which is a required step in process claim 14.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Edgar whose telephone number is (571) 272-4816. The examiner can normally be reached on Mon.-Thur. and alternate Fri., 7 am- 5 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look can be reached on (571) 272-4820. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Richard Edgar
Examiner
Art Unit 3745

RE